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SECTION 1. INTRODUCTION

The Country Cooperation Strategy (CCS) reflects a medium-term vision of WHO for technical cooperation with a given country and defines a strategic framework for working in and with the country. The CCS process, in consideration of global and regional health priorities, has the objective of bringing the strength of WHO support at country, Regional Office and headquarters levels together in a coherent manner to address the country's health priorities and challenges. The CCS, in the spirit of Health for All (HFA) and primary health care (PHC), examines the health situation in the country within a holistic approach that encompasses the health sector, socioeconomic status, the determinants of health and national policies and strategies that have a major bearing on health.

The exercise aims to identify the health priorities in the country and place WHO support within a framework of 4–6 years in order to have stronger impact on health policy and health system development, strengthening the linkages between health and cross-cutting issues at the country level. This medium-term strategy does not preclude response to other specific technical and managerial areas in which the country may require WHO assistance.

The CCS takes into consideration the work of all other partners and stakeholders in health and health-related areas. The process is sensitive to evolutions in policy or strategic exercises that have been undertaken by the national health sector and other related partners. The overall purpose is to provide a foundation and strategic basis for planning as well as to improve WHO's contribution to the Member States for achieving the Millennium Development Goals (MDGs).

The WHO country office in Saudi Arabia made necessary preparations for the CCS formulation exercise by updating information about the health sector and by arranging appointments to meet with key partners inside and outside the Ministry of Health. The joint exercise aimed at preparing the country cooperation strategy between Saudi Arabia and WHO offered an opportunity to interact with senior health officials and frame the priority areas for WHO support for the coming five years. In addition to representatives of the Ministry of Health, the CCS team also met with related ministries including education, agriculture and social affairs.

Visits were arranged to main WHO partners for health development from the United Nations system (UNICEF) and others, such as the Arab Gulf Program for Development (AGFUND) and Gulf Cooperation Council (GCC) health secretariat, in order to discuss ways and means of streamlining and of coordinating inputs in support of national health programmes and initiatives. A list of persons met is attached as Annex 1.

The CCS team also briefed senior Ministry officials about major strategic directions for WHO's cooperation with Saudi Arabia for the near future and discussed innovative approaches to reengineer technical cooperation taking into consideration country needs and WHO financial resources at country level.

SECTION 2. COUNTRY HEALTH AND DEVELOPMENT CHALLENGES

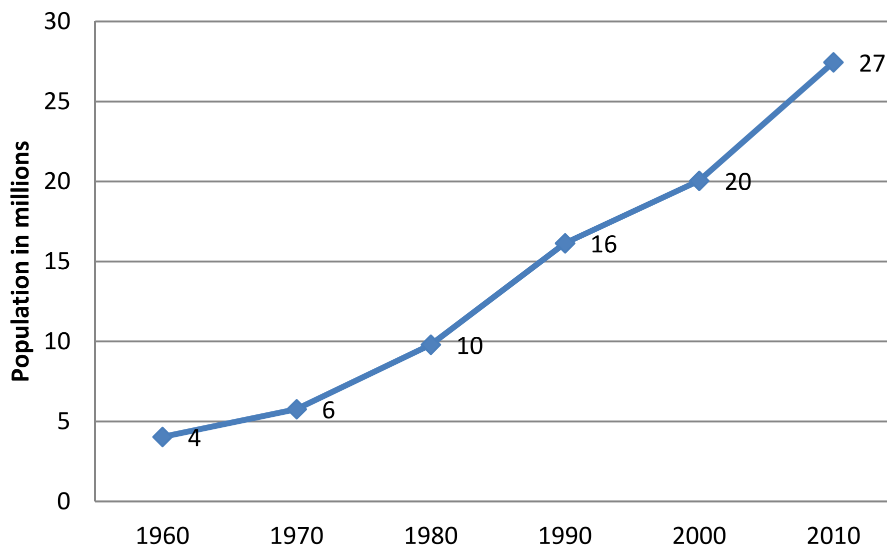
2.1 Social determinants of health

Saudi Arabia is a high-income country with a per capita GDP of US$ 22 713.4 in 2010 (Table 1) and an equally high human development index ranking, 56 in 2011.[1] The extensive health care system divided among three tiers of care and caters for a population of approximately 27 million (2010) (Figure 1), 30% of whom are under the age of 15 years (Table 2).

Table 1. Socioeconomic indicators 2010

Indicators	Data	Year
GDP growth (annual %)	4	2010
GDP per capita, PPP (current international $)	22 713	2010
Adult literacy rate, female 15+ years (%)*	85	2010
Adult literacy rate, male 15+ years (%)*	91	2010
Adult literacy rate, total 15+ years (%)*	88	2010
Population with sustainable access to improved water source (%)*	100	2010
Population with sustainable access to improved sanitation (%)*	99	2010

Source: World Development Indicators and Global Development Finance 2012 except where otherwise noted
*Source: WHO Regional Health Observatory 2012, http://rho.emro.who.int/rhodata/



Source: World Development Indicators and Global Development Finance 2012

Figure 1. Trend in total population, 1960–2010

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[1] Human Development Reports 2011 and 2010. United Nations Development Programme

Table 2. Demographic indicators 2010

Indicator	Data
Population, total	27 448 000
Population ages 0–14 (% of total)	30.0
Population ages 15–64 (% of total)	67.0
Population ages 65 and above (% of total)	3.0
Population growth (annual %)	2.0
Population, female (% of total)	45.0
Birth rate, crude (per 1000 people)	22.0
Death rate, crude (per 1000 people)	4.0
Life expectancy at birth, total (years)	74.0
Total fertility rate (births per woman)	3.0
Adolescent fertility rate (births per 1000 women aged 15–19 years)	18.0
Urban population (% of total)	84.0
Net migration	1 055 517
Percentage of population recognized as a national of Saudi Arabia*	68.9
Percentage of population recognized as a non-national of Saudi Arabia*	31.1

Source: World Development Indicators and Global Development Finance 2012 except where otherwise noted
*Source: Government of Saudi Arabia, http://www.moh.gov.sa/en/Ministry/Statistics/Indicator/Pages/Indicator-2012–01–10–0001.aspx

Oil revenues make up 80%–90% of fiscal earnings. Spending on health and social affairs has increased by 26% since 2010, in part due to the introduction of unemployment benefits.[2] In 2008, the youth unemployment rate was 28.2% (percentage of labour force aged 15–24 years), and 45.8% among women, and the total unemployment rate was 5.4% (15.9% among women).

A nationalization policy is in place with the aim of reducing dependency on foreign workers and increasing opportunities for nationals to gain employment.[3] By recent royal decree, women are encouraged to seek jobs in fields previously reserved for men, such as law and business.

Education in Saudi Arabia has in recent years focused on closing the gender gap in literacy and education in general. The literacy rate among adult females (15 years and older) went from 79.7% in 2004 to 85.0% in 2010, with a total adult literacy rate of 88% in 2010 (Table 1). Among the overall population with at least a secondary education (percentage ages 25 and older) in 2010, females comprised 50.3% and males 57.9%.[1] Obtaining a university degree is increasingly seen as a goal for many Saudi women, who currently make up 59% of

[2] Economist Intelligence Unit: Industry Report, Healthcare Saudi Arabia, February 2012.

[3] *Draft country programme document Saudi Arabia 2012–2016*. Executive Board of the United Nations Development Programme and of the United Nations Population Fund, 2011 Annual Session.

Table 3. Health status indicators (2010)

Indicator	Rate
Neonatal mortality rate (deaths per 1000 live births)	10.7
Infant mortality rate (deaths per 1000 live births)	17.3
Under five mortality rate (deaths per 1000 live births)	20.0
Maternal mortality ratio (deaths per 100 000 live births)	14.0
Births attended by skilled health personnel (%)	97.0
Pregnant women with iron deficiency anaemia (%)	30.3

Source: WHO regional health observatory 2012, http://rho.emro.who.int/rhodata//

the national student body.[4] However, legislation legally mandates gender segregation in all university campuses and not all classes or disciplines are available on women's campuses, specifically in areas of science such as engineering and veterinary medicine. In 2008 Saudi Arabia allocated 19.3% of government expenditure towards education and 5.6% of GDP.[5]

Millennium Development Goals

Saudi Arabia is on track to achieve the MDG targets. Over its past two development plans (2000–2004 and 2005–2009), extensive progress has been made in economic development. As a result of the strong economy, the country has rapidly expanded health, education and social services infrastructure. Health status indicators are shown in Table 3.

2.2 Health system

Health planning

The Ministry of Health is the main provider of health care services. Health has featured in the national 5-year development plans since 1970, and is seen as a key part of overall development in the country. The eighth national development plan 2005–2009 addressed a number of public health issues. The number of primary health care centres was increased by 8.9% from 2004.[6] The number of hospitals, physicians and nursing staff also increased. Improvements were gained in health care indicators in the areas of immunization, maternal and child health (reduction in mortality rates) and a decrease in vaccine-preventable diseases as well as eradication of poliomyelitis at national level.

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[4] Mills A. Saudi universities reach toward equality for women. *Chronicle of higher education.* August 3, 2009.

[5] World Bank online database. Available at: http://data.worldbank.org/country/saudi-arabia/

[6] *The ninth development plan 2010–2014*. Saudi Arabia, Ministry of Economy and Planning, 2010. Available at: http://www.mep.gov.sa/themes/GoldenCarpet/index.jsp;jsessionid=DE18367AF91D1864700943FF804E9022.alfa

As part of the ninth national development plan, 2010–2014, the following policies are being implemented with regard to health.[7]

- Introducing multiple sources of funding for health activities, through the Cooperative Health Insurance Scheme, as well as through enhancing the role of civil charities and the *waqf*, while rationalizing government spending and ensuring optimal use of resources, with the state budget remaining the major source of funding for basic government health services.
- Supporting information systems in the health sector through advanced information technology to make data available at both sectoral and national levels.
- Implementing mechanisms for increasing national employment in health to achieve self-sufficiency.
- Developing appropriate management and operation systems in health facilities and achieving efficient management and service standards, through adopting decentralized management, allocating separate budgets for health areas, specialist and referral hospitals, and other health agencies, and applying appropriate methods and procedures to achieve rationalization and raising efficiency.
- Implementing decentralization in management by the Ministry of Health and ensuring application of quality standards and provision of integrated comprehensive health care for the entire population in a fair, affordable manner; coordinating with other health agencies through the Council of Health Services, with other governmental health agencies being committed to performing their role within the objectives and policies of the health care strategy;
- Strengthening the role of the private health sector in complementing public efforts to achieve the goals and policies of the health care strategy. Supporting and developing the primary health care services provided by the Ministry of Health and other sectors as the cornerstone of the health system, in such a way as to raise efficiency and apply an integrated, comprehensive health care approach for the entire population.
- Raising efficiency of the emergency medical services to meet the needs in normal situations and in disasters;
- Supporting and developing curative care within an integrated, comprehensive health care framework that consists of four curative levels: primary, secondary, specialist and referral services;
- Achieving balanced distribution of health services, including specialist services, both geographically and demographically to meet the health needs of all individuals and groups in all regions;
- Ensuring the quality and efficiency of health services by adopting methods to improve performance and quality and assess returns, and applying these methods in all health facilities;

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[7] *Brief report on the Ninth Development Plan 2010–2014*. Saudi Arabia, Ministry of Economy and Planning, http://www.mep.gov.sa/themes/GoldenCarpet/index.jsp;jsessionid=D4F9A986ECA653439F8E76D3A745544B.beta#

- Ensuring adequacy and efficiency of the services provided to patients by all employees of health institutions, in order to safeguard the rights of patients, protect them from malpractice and ensure client satisfaction;
- Providing effective monitoring and control over production, import and circulation of food and medicines;
- Stressing commitment to safe handling of medical waste;
- Applying measures to rationalize energy and water usage in health facilities.

Governance

Health legislation support is important for health system functions, and particularly for the governance role of the Ministry of Health. Regulation of service delivery is supported by laws defining the responsibilities of various partners and service delivery in relation to set norms and standards. Although the Ministry of Health has demonstrated its strength in developing strategic directions for service delivery and for various promotive, preventive, curative and rehabilitative health care programmes, more concentrated efforts are required to create a national health workforce. In addition to managing, planning and formulating health policies, supervising health programmes and monitoring health services in the private sector, the Ministry of Health is responsible for advising other government agencies and the private sector on ways to achieve the government's health objectives.[8] It also coordinates health development with related ministries including the Ministry of Defense and Aviation (the second largest health care provider), Ministry of Interior, Ministry of Education and Ministry of Higher Education.

Several ministerial committees are in place in order to strengthen intersectoral action and to promote health in all policies. Intersectoral collaboration is stronger at the subnational level owing to the support of local government and stakeholders. Although the country is committed to decentralization, decisions are still made at central level in the health sector and managers working at subnational level need to be further trained and prepared to implement devolved decisions. Monitoring and evaluation of the national development plans is undertaken using a set of indicators and relying mainly on the routine information system.

Service delivery

The national strategy for service delivery and the national strategy for primary health care are patient-centred. The approach used for service provision is based on the primary health care centre strategy and application of a logical referral system. In 2009, 82% of client visits to Ministry of Health facilities were to primary health care centres comprising more than 54 million primary health care clients.[9] The public health care system, which in 2010 accounted for 82.9% of total health expenditure, is expected to rise by an average of 10% a year between 2012 and 2016.[2] Indicators for health expenditure are shown in Table 4.

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[8] Almalki M, Fitzgerald G, Clark M. Health care system in Saudi Arabia: an overview. *Eastern Mediterranean health journal*, 2011, 17(10):784–93.

[9] Walston S, Al-Harbi Y, Al-Omarc B. The changing face of healthcare in Saudi Arabia. *Annals of Saudi medicine*, 2008, 28(4):243–50.

Table 4. Health expenditure indicators, 2010

Indicator	Data
Total expenditure on health as % of GDP	4.9
Per capita total expenditure on health at average exchange rate (US$)	714.0
Per capita government expenditure on health at average exchange rate (US$)	478.0
General government expenditure on health as % of total health expenditure	67.0
Out-of-pocket expenditure as % of total health expenditure	17.1

Source: WHO regional health observatory 2012, http://rho.emro.who.int/rhodata/

A programme was recently developed by the Ministry of Health in partnership with other national and international agencies to reform service delivery in line with the national strategy. The new delivery model is organized into five tiers: primary health care centres, district hospitals, general hospitals, central hospitals and medical cities. Primary care centres serve a gatekeeping function for referrals to general and specialized hospitals. Citizens can generally only access the primary care centres in their areas of residence.[9]

The cooperative health insurance council was established in 1999 to supervise the implementation of an insurance system responsible for covering the health needs of expatriates living and working in the country. The private health care delivery network is growing steadily, triggered by the development of private insurance covering the expatriate population and some segments of Saudi population working in the private sector.

The Ministry of Health is promoting quality assurance and improvement through use of standard operating procedures and accreditation of health care facilities. Efforts are being made to improve patient safety in both public and private health facilities. Anecdotal evidence shows various standards of health care services among partners. However, concerns have been voiced about increasing malpractice in both the governmental and private sectors and about the escalating cost of health services. Such cost increases are related to the growing trend of chronic diseases and increased use of costly health and biomedical technology.

The cost of health services in the private sector is perceived as high and results in out-of-pocket expenditures, particularly for workers in the public sector, which are not covered by supplementary private health insurance. Until recently, foreign workers were not allowed to use Ministry of Health facilities except for emergencies.

Health workforce

Saudi Arabia relies heavily on an expatriate population to provide its sizeable health workforce, which leads to a great deal of turnover and instability in the health care system (Tables 5 and 6). The nursing workforce in Saudi Arabia relies primarily on expatriates who are recruited from different countries.[10]

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[10] Aldossary A, While A, Barriball L. Health care and nursing in Saudi Arabia. *International nursing review*, 2008, 55(1):125–8.

Table 5. Health human resources and infrastructure, 2010

Human resources and infrastructure	Rate per 10 000 population
Physicians	9.4
Nursing and midwifery	21.0
Dentists	2.3
Psychiatrists	0.3
Pharmacists	0.6
Hospital beds	22
Primary health care units and centres*	0.8

Source: *World health statistics 2012* except where otherwise noted
*Source: WHO regional health observatory 2012, http://rho.emro.who.int/rhodata/

The government is continuing its efforts to develop a Saudi health workforce through the introduction of number of medical, nursing and health schools. There are a total of 73 colleges for medicine, health and nursing as well as 4 health institutes in Saudi Arabia.[8] Ministry of Health employees are also given opportunities to study and train abroad through government sponsored scholarships. However, to meet the demands of the continuously growing population, the government will continue to recruit expatriate health workers.

Health information system

The national routine information system provides support to the various health system functions and building blocks at primary, secondary and tertiary levels. The Ministry of Health is promoting the use of information technology in order to improve the quality of data and evolve towards paperless management. Hospital facilities are using International Classification of Diseases, Tenth Revision (ICD-10) in order to code causes of morbidity and mortality. Few specialized institutes dealing with medical research exist. The only long established medical scientific research centre is located at the King Faisal Specialist Hospital and Research Centre, which receives its budget from the government. Its research is focused primarily on cancer, genetics, cardiovascular diseases, environmental health and infectious diseases.[9]

Table 6. Composition of Ministry of Health health workforce, 2009

Health workforce	Male		Female	
	Non-Saudi (%)	Saudi (%)	Non-Saudi (%)	Saudi (%)
Physicians	48.0	21.4	14.6	16.0
Nurses	3.9	23.4	51.9	20.8
Pharmacist	8.3	40.1	9.8	41.8
Allied health personnel	5.1	66.7	8.5	19.7
Technical personnel	48.4	39.7	3.2	8.7
Administrative personnel	1.1	77.1	0.7	21.1
Worker (all other)	34.3	43.0	12.2	10.5
Total	18.7	42.8	21.2	17.3

Source: *Health statistical yearbook 2009*. Ministry of Health, Saudi Arabia, www.moh.gov.sa

Saudi Arabia ranks seconds among Arab countries in biomedical publications; however citation frequencies of their research publications are low, an indicator of low impact.[11] While adoption of e-health systems has been slow in Ministry of Health institutions, a number of isolated information systems are operating in the regional directorates and in central hospitals. A centralized e-health service was introduced in 2008 with a 5-year roadmap aimed at connecting providers at all levels of care, measuring the performance of health care delivery and transforming health care delivery to a consistent, world-class standard.[12]

Health financing

In 1999, the Council for Cooperative Health Insurance was established by the government to meet the growing population demands for health care and to ensure the quality of services provided. The main role of the Council is to regulate and supervise a health insurance strategy for the Saudi health care market.[8] The insurance scheme, which was introduced in 1999, was planned over three stages. The first stage began in 2006 and was applied for non-Saudis and Saudis using private sector health care services. The second stage focuses on a cooperative agreement with Saudis and non-Saudis working in the government sector, and the third stage targets other groups such as pilgrims.[8]

The scheme is intended to reduce the financial burden on Saudi Arabia due to the costs associated with providing health services free-of-charge. In 2012, there were 26 health insurance companies operating through a network of 154 hospitals, including 22 public-sector hospitals operated by the Ministry of Health and 2900 health care providers. This situation contributes to the fragmentation of the system with potential impact on the extent and quality of the spectrum of care provided across the various health insurance organizations and plans, leading to escalating health care costs and contributing to increased inefficiency. For efficiency and equity gains to be realized, larger pools should be created by merging various health insurance organizations and standardizing their minimum package of provided care. In addition, the policy to finance health care through private health insurance schemes, which are for-profit, needs to be closely observed and restricted for complementary levels.

Pharmaceuticals and medical devices

Health technology including medicines, vaccines, laboratory and blood safety networks and biomedical devices represent the second cost centre in the Saudi health system. In 2010 Saudi Arabia imported pharmaceuticals worth US$ 2.63 billion, up 2.7% from the previous year. Most imports come from Europe, but there may be rising demand for low-cost generics from emerging markets owing to price competitiveness.[2] The Ministry of Health has committed to rationalizing the use of technology; however, the rate of penetration of generic

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[11] Benamer HTS, Bakoush O. Arab nations lagging behind other Middle Eastern countries in biomedical research: a comparative study. *BMC Medical research methodology*. 2009, 9:26.

[12] Saudi Arabia, Ministry of Health Portal: National e-Health Strategy, 2012. http://www.moh.gov.sa/en/Ministry/nehs/Pages/default.aspx

drugs has been slow. The local pharmaceutical industry is relatively small, produces mainly generic products and supplies only around 15% of the market.[2]

Governance of health technology is improving as a result of establishment of the Saudi Food and Drug Authority in 2011, which operates as an autonomous public entity overseeing both government and non-state sectors. The Saudi Food and Drug Authority is also supporting some countries of the Region through south-to-south cooperation.

2.3 Health programmes

Saudi Arabia is experiencing epidemiological and demographic transition, represented by a growing burden of chronic noncommunicable diseases, while population expectations for quality care services are expanding. There has been an alarming increase in the prevalence of chronic diseases, such as diabetes, heart diseases and cancer, for which the treatment is costly.

Population growth and fertility rates are relatively high, leading to increasing demand for social services including health care. Urbanization is increasing and lifestyle-related noncommunicable disease risk factors, including unhealthy eating habits, tobacco consumption and limited physical activity, are rising. The large size of the country and scattered population pose challenges to health care service delivery including health facility planning and distribution of health workforce.

Maternal and child health

Prevailing social conventions in Saudi Arabia have affected the health of women. For example, social encouragement of high fertility rates has led to a high prevalence of low bone density and osteoporosis among postmenopausal Saudi Arabian women. Early teenage marriage, found in 27.2% of Saudi Arabian women, may be a factor in maternal mortality.[2]

Table 7. Causes of death among children under 5 years (%), 2000 and 2010

Cause of death	2000 (%)	2010 (%)
Diarrhoea	4	2
Pneumonia	11	7
Prematurity	24	30
Birth asphyxia	12	8
Neonatal sepsis	5	2
Congenital anomalies	21	23
Other diseases	13	15
Injuries	10	13

Source: *World health statistics 2012*

Prevention of genetic disorders

Saudi Arabia ranks among the leading countries in the prevalence of birth defects.[13] The high prevalence of birth defects can be attributed to high rates of consanguineous marriage, which account for more than 50% of all marriages in the country.[14] Roughly 1.5 million Saudi Arabians have or are carriers of inherited blood diseases. As shown in Table 7, 23% of under-5 mortality is due to congenital anomalies. As termination of pregnancy is not permitted unless there is imminent danger to the mother continuing the pregnancy, primary prevention programmes such as premarital genetic screening tests are the only practical option to reduce the incidence of genetic haematological disease. In one study, a majority of Saudi Arabian mothers were unaware of the increased risks of haemoglobinopathies from consanguinity.[14]

Communicable diseases

Communicable diseases have ceased to be the leading cause of mortality in the country, in fact the rates of malaria and tuberculosis are negligible according to the World Health Report 2012. The malaria cases reported are primarily due to the country's southern border with Yemen, where the disease is still prevalent. WHO is assisting a joint Saudi–Yemeni coordination committee for malaria/vector control to monitor and control the situation. Saudi Arabia has a national tuberculosis control programme but DOTS treatment is only available in the public sector.

The prevention and treatment of HIV/AIDS has become a priority. The first case of HIV was diagnosed in Saudi Arabia in 1984. During the same year the national AIDS control programme was established. Nationals and stakeholders working in the programme agree that the true prevalence of HIV is probably much higher than the reported cases, given the under-reporting and the difficulty in reaching high-risk groups. The total number of HIV positive cases in 2008 was 13 926, of which 3538 (25.4%) were among Saudis and 10 388 (74.6%) were among non-Saudis.[15] The full range of treatment is available in eight specialist centres and the Ministry of Health is planning to establish a further eight centres. HIV coordinators, present in every regional directorate, coordinate Ministry of Health prevention, treatment and care programmes, focusing on developing dialogue with schools, religious leaders and the general public, introducing syndromic management for sexually transmitted diseases into primary health care facilities and working with vulnerable groups.

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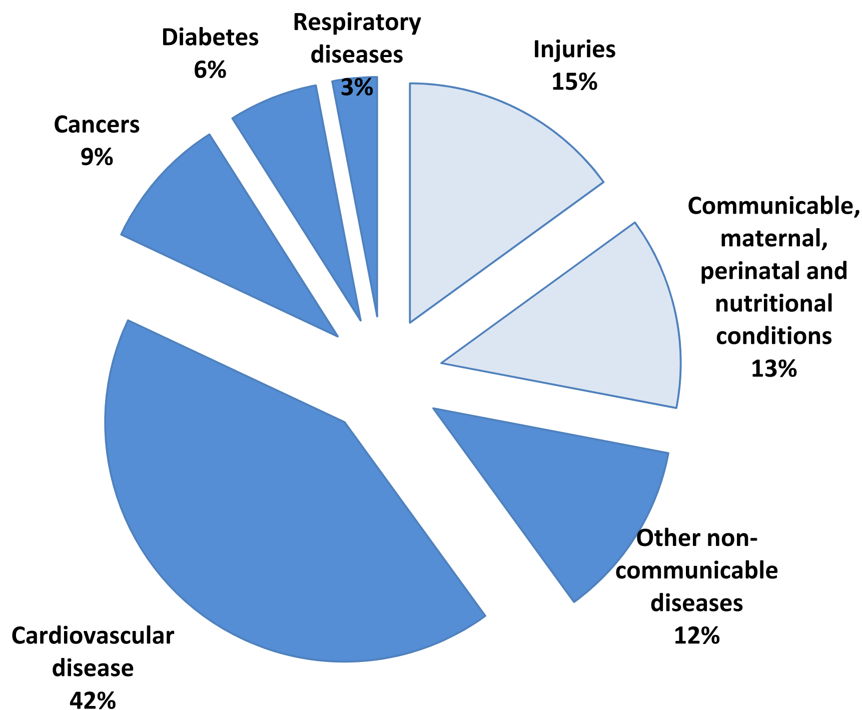
[13] Christianson A, Howson CP, Modell B. *Global report on birth defects: the hidden toll of dying and disabled children*. New York, March of Dimes Birth Defects Foundation, 2006.

[14] Mobaraki AEH, Söderfeldt B. Gender inequity in Saudi Arabia and its role in public health. *Eastern Mediterranean health journal*, 2010, 16(1):113–8.

[15] *UNGASS country progress report 2010*, Saudi Arabia Ministry of Health, 2010. Available at: http://www.unaids.org/en/dataanalysis/knowyourresponse/countryprogressreports/2010countries/saudiarabia_2010_country_progress_report_en.pdf

Noncommunicable diseases

Noncommunicable diseases account for 71% of all mortality in Saudi Arabia, with cardiovascular the leading cause of mortality (Figure 2).[16] An alarmingly high rate of physical inactivity among the Saudi population has been reported, predisposing them to health problems. Saudi youth are also affected by the global epidemic of obesity.[17] A centre for noncommunicable diseases has been established and is instituting a number of programmes for prevention of the most common noncommunicable diseases, including programmes for diabetes prevention, healthy diet and physical activity, early examination of newborn children, addressing unhealthy behaviours and osteoporosis screening. Advocacy campaigns are being used to raise awareness.



Source: *Noncommunicable diseases country profiles, 2011.*

Figure 2. Proportion of mortality (percentage of total deaths, all ages), 2008

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[16] *Noncommunicable diseases country profiles, 2011*. Geneva, World Health Organization, 2011.

[17] Al-Nuaim AA et al. The prevalence of physical activity and sedentary behaviours relative to obesity among adolescents from Al-Ahsa, Saudi Arabia: rural versus urban variations. *Journal of nutrition and metabolism*, 2012, 2012:417589.

Diabetes mellitus

The prevalence of diabetes mellitus has been on the rise in the past decade, globally and in the Region. Saudi Arabia ranks high in diabetes prevalence against both the global and regional average. As of 2008, a staggering 20% of nationals over the age of 20 suffered from type 2 diabetes, brought on by poor diet and sedentary lifestyles. This is one of the highest rates in the world. Although mortality attributed to diabetes is 6% (Figure 2), temporary and permanent disabilities caused by complications of diabetes include blindness, amputations, kidney failure and cardiovascular disease. Consequently, diabetes is an important economic burden due to the cost of treatment and the loss of productivity.

Cardiovascular disease

Cardiovascular disease is the leading cause of mortality in Saudi Arabia, accounting for 42% of all deaths (Figure 3). There is a high prevalence of metabolic risk factors such as high blood pressure, raised blood glucose and obesity among its population (Table 8). In the Heart Ejection Registry Trial (HEARTS), a multicentre national quality improvement initiative in the Arab population to study the clinical features, management, and outcomes of inpatients admitted with acute heart failure and outpatients with high-risk chronic heart failure, one of the key findings was that patients with heart failure present at much younger age than the global average and are more likely to have developed diabetes mellitus.[18] In addition, a study carried out on patients who had undergone cardiovascular surgery found that the female sex is an independent and strong predictor of adverse outcome after bypass surgery compared to males due to significantly higher co-morbidities and more acute presentation; and independent of their peri-operative management. Female coronary artery disease patients should therefore be recognized as a higher risk subset of patients.[19]

Table 8. Prevalence of metabolic risk factors in Saudi Arabia, 2008

Metabolic risk factor	Female (%)	Male (%)
Raised fasting blood glucose among adults aged ≥ 25 years	21.7	22.0
Raised blood pressure among adults aged ≥25 years	28.7	32.9
Adults aged ≥20 years who are obese	43.5	29.5
Smoking any tobacco product among adults aged ≥15 years	1.0	24.0
Current tobacco use among adolescents aged 13–15 years	9.0	21.0
Physical inactivity*	74.9	60.7

Source: *World health statistics 2012* except where otherwise noted
**Noncommunicable diseases country profiles, 2011*

[18] AlHabib KF et al. Design and preliminary results of the Heart Function Assessment Registry Trial in Saudi Arabia (HEARTS) in patients with acute and chronic heart failure. *European journal of heart failure*, 2011, 13:1178–84.

[19] Ahmad M et al. Gender differences in the surgical management and early clinical outcome of coronary artery disease: Single centre experience. *Journal of the Saudi Heart Association*, 2010, 22(2):47–53.

Table 9. Ten most common cancers in Saudi Arabia, 2007

Top 10 cancers in males	%	Top 10 cancers in females	%
Colo-rectal	11.2	Breast	26.0
Non-Hodgkin lymphoma	9.6	Thyroid	9.9
Leukaemia	7.7	Colo-rectal	8.8
Lung	7.4	Non-Hodgkin lymphoma	6.0
Liver	7.2	Leukaemia	4.8
Prostate	6.0	Corpus uteri	4.0
Hodgkin disease	4.1	Ovary	3.1
Stomach	4.0	Hodgkin disease	2.7
Bladder	3.9	Stomach	2.6
Skin	3.7	Skin	2.5

Source: *Cancer incidence and survival report Saudi Arabia 2007*, special edition. Ministry of Health Saudi Cancer Registry, 2007. Available at: http://www.scr.org.sa/reports/SCR2007.pdf

Cancer

In 1992 the Saudi Cancer Registry was established under the jurisdiction of the Ministry of Health. According to the registry, there were 12 309 cases of cancer in 2007, affecting 5982 (48.6%) males and 6321 (51.4%) females with a male to female ratio of 95:100. The cancer incidence rate was 52.3 per 100 000 population, with 78.3% Saudi. The ten most common cancers are shown in Table 9.

Risk factors for noncommunicable diseases

In 2009, Saudi Arabia imported tobacco products totalling US$160 million.[20] Although political commitment is evident, the rate of smoking in Saudi Arabia continues to increase. The prevalence of smoking among adolescents was estimated at 24% in 2009.[21] Among adults (15–64 years) it was estimated at 20% in 2010.

Health promotion traditionally begins in school, teaching children sports and health education. However, physical activity is not encouraged among female Saudi youth, and there are no sports or physical activities for Saudi girls.[22] Obesity rates among women are high, 43.5% (Table 8). High carbohydrate, sugar and red meat consumption exacerbate the high levels of obesity seen in the country and contribute to the high levels of mortality attributed to cardiovascular disease and diabetes (Figure 2).

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[20] Bassiony MM. Smoking in Saudi Arabia. *Saudi medical journal*, 2009, 30(7):876–81.

[21] *WHO report on the global tobacco epidemic, 2011. Country profile Saudi Arabia*. Available at http://www.who.int/tobacco/surveillance/policy/country_profile/sau.pdf

[22] Rawasa HO et al. Cultural challenges to secondary prevention: implications for Saudi women. *Collegian*, 2012, 19(1):51–7.

Table 10. Road traffic crashes, 2007

Indicator	Total	Female (%)	Male (%)
Reported road traffic fatalities	6358	14	86
Reported non-fatal road traffic injuries	36 025	NA	NA

NA Data not available
Source: *Eastern Mediterranean status report on road safety: call for action 2010*. Cairo, WHO Regional Office for the Eastern Mediterranean, 2010.

Mental health

The first psychiatric hospital opened its doors in Saudi Arabia in 1952; by 2010 there were 20 hospitals available across the country. There are limited community mental health care services in Saudi Arabia. Besides private psychiatric services, there exist well-developed outpatient and inpatient services in psychiatric hospitals. Mental health professionals have also been incorporated into primary health care centres. In 2010, the psychiatric bed rate was 1.3 per 10 000 population.[23]

Road traffic injuries

In 2007, there were 36 025 non-fatal injuries and 6358 deaths due to road traffic injuries (Table 10). According to WHO, road traffic accidents are now the primary cause of death, injury and disability in adult males aged 16 to 36 years in Saudi Arabia. The cost of health care for people affected by road accidents is significant; for example, the cost of treating people injured due to road traffic crashes during 2002 was estimated at 652.5 million Saudi riyals (US$ 174 million).[8] The government has launched a road safety campaign targeting the youth and is implementing the United Nations Global Plan for the Decade of Action for Road Safety 2011–2020.

Environmental health

Environmental health and food safety are important programmes in the Ministry of Health. In the case of environmental health the role of Ministry of Health is monitoring drinking-water quality and environmental hazards to ensure they do not harm people's health. With creation of the Food and Drug Administration, food safety has become better reinforced. Food safety inspection in public eating places and markets is undertaken by municipalities.

Medicine for mass gatherings

Saudi Arabia is host to large mass gathering events attracting more than 3 million people from more than 183 countries annually. These gatherings pose a variety of health risks including those due to infectious diseases such as seasonal, respiratory, foodborne and other gastro-intestinal illnesses, skin diseases and injuries. To address such risks, Saudi Arabia has

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[23] Al-Habeeb AA, Qureshi NA. Mental and social health atlas I in Saudi Arabia: 2007–08. *Eastern Mediterranean health journal*, 2010, 16(5):570–7.

put in place an advanced health care system infrastructure that includes 141 primary medical clinics and 24 hospitals in the immediate vicinity of the pilgrimage areas.

2.4 Challenges and opportunities

Saudi Arabia is undergoing epidemiological and demographic transition, represented by a growing burden of chronic and noncommunicable diseases and ageing population, while public expectations for quality care services are expanding. These changes are contributing to rapid escalation in the costs of health care services. Population growth and fertility rates are high, leading to increasing demand for social services including health care. Urbanization is increasing and unhealthy lifestyles, represented by unhealthy eating habits, tobacco consumption and limited physical activity, are on the rise.

Health development features high on the sociopolitical agenda as evident in the Ninth Development Plan to finance the service delivery reform programme developed by the Ministry of Health.

In addition, the country has many centres of excellence for health care services and research which are supporting other countries in the Region. Saudi Arabia also promotes subregional collaboration in health development by hosting the GCC health secretariat, which is managing regional health programmes and initiatives including pooled purchase of quality assured medicines and capacity development for various categories of health professionals.

The new strategies for primary health care and for service delivery are patient-centred, focus on health promotion and protection and put emphasis on social determinants of health. Coordination between the Ministry of Health and related sectors is paving the way to advocate for health in all policies, and such coordination is stronger at subnational level. Human resource development aimed at gradually replacing the expatriate population is among national priorities in health development plans.

SECTION 3. DEVELOPMENT COOPERATION AND PARTNERSHIPS

3.1 UN System

As of 2009, Saudi Arabia became the world's largest provider of humanitarian assistance by GDP. It was instrumental in providing critical assistance in the Region in times of crisis, such as in the aftermath of the Pakistan earthquake and during Somalia's famine. Saudi Arabia is now the third-largest developing-country contributor to global development efforts after China and India, providing at least US$1 billion a year. Much of this aid is through the official Saudi Fund for Development.[24] It has also assisted in additional humanitarian efforts by giving soft loans estimated at US$ 100 billion.

The United Nations Country Team (UNCT) consists of the following agencies: UNDP, UNICEF, UNHCR, WHO, FAO and the World Bank. The UNCT has developed a common country strategic framework in order to align the UN's efforts with the Ninth National Development Plan 2010–2014. The framework is intended to serve as a model for agencies working together for Saudi Arabia. It represents an instrument to facilitate the development of partnerships among United Nations agencies and between the United Nations, the government, the private sector, nongovernmental organizations and other stakeholders, while reflecting the aspirations of international and national commitments.

3.2 WHO collaborating centres

Currently there are three active collaborating centres in Saudi Arabia.

- King Faisal Specialist Hospital and Research Centre: WHO collaborating centre on e-health (since February 2010)
- King Abdulaziz Medical City, King Fahd National Guard Hospital: WHO collaborating centre for infection prevention and control (since January 2009)
- King Khaled Eye Specialist Hospital: WHO collaborating centre for prevention of blindness (since February 2010)

These WHO collaborating centres provide training and education, support and conduct research, disseminate scientific information, and enhance partnerships and networking in the areas related to their respective work. Given the degree of high quality specialist expertise in the country, and the broader needs within the Region, Saudi Arabia is well placed to expand this list of collaborative centres.

3.3 Civil society and other stakeholders

The following is a list of national stakeholders and civil society organizations with whom both the Ministry of Health and WHO are collaborating.

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[24] United Nations Country Team, Country Analysis 2011. http://www.undp.org.sa/sa/documents/rc/rc_ca.pdf

Saudi Food and Drug Authority: established under the Council of Ministers to ensure safety of food and drugs for humans and animal, and safety of biological and chemical substance as well as electronic products.

The Council of Cooperative Health Insurance: established under the Council of Ministers to introduce qualified health insurance companies and accredited health care facilities in both the private and public sector.

Military Medical Services Headquarters: established by the Ministry of Defense and Aviation to provide a major portion of the medical services for the military personnel and their dependents in Saudi Arabia through a full range of diagnostic and management facilities for patients ranging in age from the neonate to the elderly.

Saudi Red Crescent Authority: offers emergency medical services and contributes to enhancing the standard of medical knowledge level. The Authority contributes to humanitarian work within the country and abroad.

The Executive Board of Health Ministers' Council for GCC States: established to coordinate between the Cooperation Council States for the Arab Gulf in the health field. The Council includes the following countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates and Yemen.

King Fahd Medical City: established by the Ministry of Health and considered the largest and most advanced medical complex in the Middle East with a total capacity of 1095 beds. The complex houses specialty clinics for diagnosing and treating various diseases, children's and maternity hospitals, 30 fully-equipped operating rooms and the largest number of intensive care beds in the Region.

King Faisal Specialist Hospital and Research Centre: established by the Ministry of Health to provide the highest level of specialized health care in an integrated educational and research setting.

AGFUND: established by His Royal Highness Prince Talal Bin Abdul Aziz Al Saud with the support of leaders of the Gulf Cooperation Council countries to support and finance 1268 projects in 133 developing countries. To date, 952 projects have been completed and 316 projects are under construction and implementation.

SECTION 4. CURRENT WHO COOPERATION

In view of rapid development in the country, particularly in the field of public health, the current level of collaboration with the Saudi government should be strengthened. WHO's collaboration, if expanded with a strategic focus on key priorities, can provide considerable support to the country's massive investment in health development. The government is planning large-scale expansion of the health infrastructure in the immediate future, and all areas of public health will need to expand in parallel. WHO is uniquely positioned to be an effective partner and catalyst in health system development.

In addition to providing technical support for the health programmes of the government, the WHO country office represents WHO in UN-related and other activities and liaises with the GCC Health Secretariat and AGFUND. Table 11 shows the budget for WHO collaboration in Saudi Arabia in 2010–2011, as of December 2011.

Table 11. Programme budget for 2010–2011

Strategic objectives	**Total funds available 2010–2011**	
	Assessed contributions	**Voluntary contributions**
1. To reduce the health, social and economic burden of communicable diseases	62,563	10,876
2. To combat HIV/AIDS, tuberculosis and malaria	92,014	1,457,762
3. To prevent and reduce disease, disability and premature death from chronic noncommunicable conditions, mental disorders, violence and injuries and visual impairment	63,000	0
4. To reduce morbidity and mortality and improve health during key stages of life, including pregnancy, childbirth, the neonatal period, childhood and adolescence, and improve sexual and reproductive health and promote active and healthy ageing for all individuals	47,000	
5. To reduce the health consequences of emergencies, disasters, crises and conflicts, and minimize their social and economic impact	0	
6. To promote health and development, and prevent or reduce risk factors for health conditions associated with use of tobacco, alcohol, drugs and other psychoactive substances, unhealthy diets, physical inactivity and unsafe sex	33,000	
7. To address the underlying social and economic determinants of health through policies and programmes that enhance health equity and integrate pro-poor, gender-responsive, and human rights-based approaches	64,000	
8. To promote a healthier environment, intensify primary prevention and influence public policies in all sectors so as to address the root causes of environmental threats to health		
9. To improve nutrition, food safety and food security throughout the life-course and in support of public health and sustainable development	16,000	
10. To improve health services through better governance, financing, staffing and management, informed by reliable and accessible evidence and research	159,923	247,000
11. To ensure improved access, quality and use of medical products and technologies	50,000	
Total	**587,500**	**1,715,638**

All programmes were fully implemented.

During the mission to develop the CCS, it was clear that WHO support is valued in Saudi Arabia, but that there are areas that need improvement:

- More resources for strengthening the WHO office, such as through a fund-in-trust arrangement;
- Timely response to requests for support and guidance;
- Identification of technical expertise from beyond the Region, particularly in areas where experience from established and well developed health systems is required.

SECTION 5 STRATEGIC AGENDA FOR WHO COOPERATION

5.1 Strategic priorities for WHO and the Government of Saudi Arabia

Extensive consultations between the WHO team and the Ministry of Health leadership and other stakeholders identified four strategic priorities for collaborative work: strengthening health promotion and control of noncommunicable diseases; strengthening communicable disease control and health security; strengthening the health care delivery systems; and improving partnership for health development. Under each priority, a set of strategic approaches were framed. These strategic approaches will constitute and guide collaboration for the period 2012–2016.

5.2 Strategic approaches

Strengthening health promotion and control of noncommunicable diseases

- Implementing the reform programme for service delivery and strengthening the primary health care strategy on health promotion aimed at promoting healthy lifestyles and at reducing risk factors.
- Strengthening intersectoral action for health development, including advocacy for health in all policies, through established councils and healthy settings programmes.
- Ensuring universal access to, and coverage with, effective public health interventions to improve maternal, newborn, child, adolescent and reproductive health, using a life-course approach; fostering synergies between relevant programmes and promoting healthy and active ageing for all.
- Strengthening food and chemical safety including in-depth evaluation, review and updating of policies and plans.
- Reviewing the environmental health programme, with special emphasis on the primary health care level, as well as clearly defining the institutional responsibilities of the Ministry of Health for surveillance of different aspects of environment to safeguard public health against environmental hazards.
- Giving special focus to adolescent health including school health and strengthened partnership with ministry of education and promoting WHO action oriented school health curricula.
- Developing a media health strategy and training staff of the Health Promotion Department of the Ministry of Health for collaborating and handling media, especially on health emergencies.
- Improving road safety (SAHER programme for speed control) with emphasis on enhancing related information systems focusing on partnership with related ministries and improving emergency and rehabilitative health care services.
- Strengthening health education through promotion of the WHO-supported health academy.
- Improving noncommunicable disease and cancer registries.
- Undertaking applied research on behavioural factors risk factors for noncommunicable disease such as unhealthy diet, physical inactivity and smoking.

- Implementing the Political Declaration of the United Nations General Assembly on the prevention and Control of Noncommunicable Diseases, through implementation of the GCC plan of action for noncommunicable diseases which has been adapted from the WHO global action plan.

Strengthening communicable diseases control and health security

- Strengthening implementation of various components of international health regulations including surveillance system for communicable diseases, control at point of access and strengthening of laboratory services.
- Maintaining the good progress achieved on communicable and vector borne diseases.
- Strengthening disease surveillance in areas in risk in southern border areas for malaria.
- Strengthening and maintaining progress in control of tuberculosis.
- Paying special attention for prevention, surveillance and treatment of people patients with HIV/AIDS giving a special focus on harm reduction and injecting drug users.
- Implementing the proposal made by Saudi Arabia to the WHO Executive Board on mass gatherings including training of staff (diploma).
- Reducing rates of nosocomial infections in health facilities.
- Support for improving the quality of imported and produced vaccines in Saudi Arabia including laboratory network in both public and private sectors.
- Strengthening the health emergency preparedness plan to be able to plan for medical response to chemical and radiation emergencies.

Strengthening the health care system

- Strengthening the Ministry of Health at central and subnational levels through improvement of governance function and ownership of some analytical tools aimed at assessing health system performance (national health account, burden of diseases, cost–effectiveness analysis) and strengthening of health economics department.
- Preparing long-term scenarios for human resource development, including gradual replacement of the expatriate health workforce, and training in the field of family practice.
- Strengthening decentralization and autonomy to hospitals through training in management and better financial management.
- Developing a culture of costing and cost analysis in health care system.
- Initiating a household health care expenditure and health seeking behaviour survey in order to improve knowledge about the private sector in terms of service delivery and expenditures.
- Designing health care financing options including social and private health insurance schemes.
- Implementing a patient-centred and integrated health care delivery strategy including improved partnership with all stakeholders.
- Strengthening rational use of health and biomedical technology and support to the Food and Drug Authority.

- Strengthening the national health information system including the routine system, promotion of population-based surveys, use of information technology, use of research findings and training on ICD 10.

Improving partnership for health development

- Strengthening partnership with related ministries and agencies in health promotion and service provision.
- Supporting civil society's contribution to the healthy cities programme.
- Mapping all centres of excellence in order to identify potential WHO collaborating centres for south-to-south cooperation.
- Strategizing technical collaboration with Saudi Arabia to support national priorities.
- Promoting innovative approaches for funding WHO technical collaboration through funds in trust provided by the Ministry of Health to support national programmes (example of FAO and other UN agencies).

SECTION 6. IMPLEMENTING THE STRATEGIC AGENDA: IMPLICATIONS FOR WHO

At country level

The strategic agenda for WHO collaboration calls for expansion of WHO's programme in Saudi Arabia. The strategic approaches developed under the four priority areas for the next 5 years are extensive. In order to translate these into action, more WHO technical and general staff will be required in several fields including health promotion, environmental health, noncommunicable disease and human resource development.

Support staff should be made available through partnership with Ministry of Health. Connectivity of the country office should be further improved through increased use of information technology. Enlisting the aid of a communication specialist would assist in improving WHO's visibility inside the country and could facilitate partnership for health development.

Since Saudi Arabia is a high-income country, the cost of expanding WHO's programme, similar to other UN agencies should come through a fund-in-trust. Arrangements for funds-in-trust between the Government of Saudi Arabia and WHO already exist and considerable voluntary contributions were allocated by the government for the 2010–2011 biennium. WHO continues to provide regular budget funds for salaries and running costs of the WHO office.

Since the Ministry of Health is collaborating with a large number of external partners in different areas of health, an expanded presence in the country could assist WHO in its role as health broker to facilitate closer collaboration between different partners and to harmonize their respective contributions. Negotiations between WHO and government should start as early as possible and should begin with a high level delegation from the Regional Office visiting Saudi Arabia for discussions at ministerial level.

At regional level

Support is needed from the Regional Office in negotiation with the government for expansion of the programme and in provision of technical backstopping in all areas. The Regional Office should provide necessary technical support along the lines agreed upon within the strategic directions through fielding of senior health professionals. Cooperation should be strategized and could involve integrated teams. Senior national officials should be involved in normative work carried out at the regional level in order to share the benefits of their experience and to establish working arrangements with counterparts in other countries of the Region.

At global level

National experts should be involved in WHO activities and efforts should be made to ensure better coordination between the three levels of WHO when providing technical support to various health development programmes and activities.

Annex 1

LIST OF PERSONS MET

Ministry of Health

H.E. Dr Mansour Al Hawwasi, Vice Minister of Health
Dr Ziad A. Memish, Assistant Undersecretary for Preventive Medicine
Dr Ali Al Kahtani, Assistant Deputy Minister for human Resources
Dr Khalid Marghlani
Dr Falah Al Mazrou, Director-General Preventive Health
Dr Mohamed Omer Ba Suleiman, Director General Planning
Dr Mohamed Al Yomni, General Supervisor of ICT
Dr Abdullah A. Al Wehaibi, Assistant to the General Supervisor of ICT

Other partners

Dr Tawfik A. Khojah, Director-General Executive Bureau, Health Ministers' Council for the Cooperation Council States
Dr Saleh Bawazir, Saudi Food and Drug Administration
Dr Nasser Al-Kahtani, Executive Director AGFUND
Ms Maha Aal Al Sheikh, Assistant Director of Projects, AGFUND
Dr Abdullah Al Sharif, Secretary General, Council of Health Cooperative Health Insurance
Dr Suleiman Al Shehry, Director General Medical Service, Ministry of Education
Dr Faisal Bayoumi, Deputy Minister of Agriculture for Animal Resources
Dr Talaat Al Wazna, Deputy Minister of Social Affairs
Dr Ibrahim El-Ziq, UNICEF Area Representative

CCS team members

Dr Mostafa Tyane, WHO Representative, Saudi Arabia
Dr Belgacem Sabri
Mr Kuimars Khosh-Chashm